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**Danielsson**

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(54) **ARRANGEMENT FOR A STEERING  
MECHANISM**

6,095,012 A \* 8/2000 Lutz ..... 74/493

**FOREIGN PATENT DOCUMENTS**

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JP 61-21860 \* 1/1986  
SE 449329 4/1987

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\* cited by examiner

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(57) **ABSTRACT**

**Related U.S. Application Data**

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(58) Field of Search ..... **74/493; 280/775**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,507,982 A \* 4/1985 Turner et al. .... 74/493  
4,607,540 A \* 8/1986 Kinoshita et al. .... 74/493  
4,750,379 A \* 6/1988 Nishikawa et al. .... 74/493  
4,788,880 A \* 12/1988 Kester ..... 74/493  
4,876,910 A \* 10/1989 Nishikawa et al. .... 74/493  
5,606,891 A 3/1997 Tisell et al.

Adjustable steering arrangement for a driver of a vehicle having an inner steering wheel shaft adapted to be connected to a steering wheel of the vehicle. The inner steering wheel shaft being arranged to be vertically adjustable and with respect to distance from the driver. A first lock arrangement is configured to fix the inner steering wheel shaft in a chosen position with respect to vertical and distance from the driver and a second lock arrangement is configured to fix the steering wheel in at least two distinct vertical positions independent of any locking of the first lock arrangement. The first lock arrangement is supported on a locking spindle extending substantially transverse to a longitudinal direction of the inner steering wheel shaft and is connected to the inner steering wheel shaft. The second lock arrangement has a rotatable tilting spindle that extends coaxially through the locking spindle.

**16 Claims, 2 Drawing Sheets**

